

S.#	Question	Answer Option (A)	Answer Option (B)	Answer Option (C)	Answer Option (D)
1	If a car moves from 15 m/s to 5 m/s in 10 sec then average acceleration is	1 m/s ²	2m/s ²	5 m/s ²	10m/s ²
2	If a car starts from rest and reaches 20 m/s velocity in 10 m distance then acceleration is	20 m/s ²	10 m/s ²	5 m/s ²	2m/s ²
3	instantaneous velocity is defined as	dx/dt	$\Delta x/\Delta t$	$\Delta x \cdot \Delta t$	$\Delta v/\Delta t$
4	For a straight trajectory of a particle instantaneous velocity is	2*(average velocity)	average velocity	zero	not enough info
5	instantaneous velocity is	always positive	always negative	positive and negative	not enough info
6	Work done by the centripetal force on a body moving in circle is zero because	the body moves parallel to F	the body move opposite to F	the body move right angle to F	centripetal and centrifugal balance each other
7	Which is the unit of energy	joule	erg	unit(Kwh)	all of these
8	A particle having mass m and momentum p, kinetic energy of the particle is given by	p ² /m	p/m	p ² /(2m)	m ² /p
9	A spring of force constant 800 N/m has an extension of 5 cm, the work don in extending it from 5 cm to 15 cm	16 J	8 J	32 J	24 J
10	A spring gun has a force constant 1000 N/m. When a ball of 10 gm is shot from this gun, its spring is compressed by 10 cm. Find the maximum horizontal distance that can be achieved by the ball : (g = 10 m/s ²)	20m	25m	50m	100m
11	What is 1 radian in degrees approximately	57.3 degrees	360 degrees	π degrees	π^2 degrees
12	The angular speed for the daily rotation of Earth in rad s ⁻¹ is?	2 π	π	4 π	7.3 x 10 ⁻⁵ rad s ⁻¹
13	Angular displacement is zero when	angle =0	v=0	r=0	both b and c
14	Which quantity is a scalar quantity	angular displacement	angular velocity	angular acceleration	none of these
15	Angular velocity cannot be	zero	negative	infinite	linear
16	The stationary waves can be set up on the string only with the frequencies of harmonic series determined by:	the tension, length and mass per unit length of the string	the tension and mass per unit length of the string only	the length and mass per unit length of the string only	the tension and length of the string only
17	The frequency of a string on a musical instrument can be changed either by:	varying the diameter or by changing the length	varying the tension or by changing the thickness	varying the tension or by changing the length	varying the thickness or by changing the length
18	A standing-wave pattern is formed when the length of the string is:	an odd multiple of quarter wavelength	an integral multiple of quarter wavelength	an integral multiple of wavelength	an integral multiple of half wavelength
19	A stationary wave is setup on a string of length 10 cm. Four loops are formed. what is the distance between two consecutive crests?	4.5 cm	5 cm	2.5 cm	1.25 cm
20	If a pipe is closed at one end and open at the other, the closed end is a:	antinode	node	rarefaction	crest
21	System in thermodynamics is disconnected with surrounding by	Pressure	Universe	Boundary	Temperature
22	For an ideal gas heated under constant pressure the % of heat utilised in work is	0.4	0.5	0.3	0.2
23	Two samples A and B of a gas initial at same pressure compressed from V to V/2 (A isothermally and isobarically) What is the pressure in A	equal to B	greater than B	less than B	Twice of pressure at B
24	When a ideal monatomic gas is heated at constant pressure fraction of energy supplied which increases internal energy of gas is	44232	44260	44201	44259
25	A proton has mass m and charge q. It is suspended in electric and gravitational field. What is the magnitude of electric field?	E = m*g / q	E = m*g / q*v	E = m*g / q*v*B	E = q / m*g
26	What is the formula for Coulomb's law?	F=Kq1q2/r ²	F=2Kq1q2/r ³	F=Kq1/r	F=Kq1/q2
27	The change in potential energy per unit charge between two points in an electric field is called	Potential difference	Absolute Potential	Electric intensity	Permittivity
28	Series combination of two capacitor C1 and C2 is	C1+ C2	(C1)(C2)	(C1C2)/(C1+C2)	C1/C2
29	The fractional change in resistivity per kelvin	coefficient in resistance	coefficient of resistivity	resistance	None of these
30	In case of source of charge at a point, the total charge flowing towards the point and the total charge flowing away from the point must be	equal	not equal	does not relate	none of these
31	The ratio of emf of two cells E1/E2 equals	L1/L2	1:2	L2/L1	2:1
32	With the help of Kirchhoff's Current Law (KCL) and Kirchhoff's Voltage Law (KVL), you can find equivalent _____ and _____ of different conductors.	current, frequency	current, voltage	resistance, current	resistance, voltage
33	Find the Lorentz force of a charge 2.5C having an electric field of 5 units and magnetic field of 7.25 units with a velocity 1.5m/s.	39.68	68.93	89.39	63.98
34	Magnetic Field lines move from _____	north to south	south to north	east to west	west to east
35	A square coil of side length 2 mm is placed in the x-y plane and in uniform magnetic field 0.1 T, find total flux through the coil	1.6 Wb	0.16 Wb	16 Wb	0 Wb
36	Strength of magnetic field is called	strength	flux	magnetic flux density	density
37	In order to enhance magnetic flux, the primary and secondary coils of the transformer are wound on	soft iron core	iron core	hard iron core	steel core
38	Transformer operates on	A.C	D.C	both	none of these
39	SI unit of inductance is	Henry	Farad	Maxwell	Weber
40	A cable 4 km long and of total resistance 1 ohm carries electric current from a generator producing 100kW at 10,000 Volts. The current in amperes in the cable is	10	10,000	1000	100,000
41	Transistors can be used as	half wave rectifier	full wave rectifier	both	none of these
42	electrons in the valence band of semiconductors are called	valence electrons	free electrons	fermi electrons	none of them
43	Pure semiconductors are called	intrinsic semiconductor	extrinsic semiconductor	electronic devices	none of them
44	Which of the following rectifier uses wheatstone bridge to rectify signal	half wave	full wave	bridge	All of the above
45	Electron microscope describes the _____ nature of particles which are electrons	particle	wave	both	none of these
46	Which of the following statements is incorrect about the photons	Momentum of photon h/λ	Rest mass of photon is zero	photon exert no pressure	Energy of photon is hv
47	In stationary waves	Strain is maximum at antinodes	Strain is minimum at nodes	Strain is maximum at node	Amplitude is same at all points
48	A particle performing SHM when its displacement is 3 cm, its acceleration is 12 cm s ⁻² . It is vibrating with period	4 π Sec	3 π Sec	2 π Sec	π Sec
49	Molecular spectra are examples of	solar spectra	continuous spectra	band spectra	line spectra
50	As mass number increases, which of the following does not change	mass	density	volume	binding energy
51	If alpha, beta, and gamma rays carry the same momentum, which has the longest wavelength?	alpha rays	beta rays	gamma rays	all have same wavelength
52	The half life of radioactive element is	0.693λ	0.693/λ	λ/0.693	1/λ
53	An Ionic atom which is equivalent to hydrogen atom has wavelength equal to 1/4th of hydrogen lines is	He+	Li++	Ne+9	Na10+
54	When two electrons are removed from an atom the charge on atom becomes	2+	2-	0	4
55	If two neutrons hit together at slow speed they behave like	snooker balls	immediately comes to rest	fuse into each other	nothing will happen
56	Radiation exchange occurs in which medium	solid	liquid	gas	vacuum